

L10 ANSWER 66 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1995:964675 CAPLUS
 DN 124:25687
 TI Protein-protein interactions within the **endoplasmic** reticulum
 AU Gillikin, Jeffrey W.; Fontes, Elizabeth P. B.; Boston, Rebecca S.
 CS Department of Botany, North Carolina State University, Raleigh, NC,
 27695-7612, USA
 SO Methods in Cell Biology (1995), 50, 309-23
 CODEN: MCBLAG; ISSN: 0091-679X
 DT Journal
 LA English
 AB This chapter focuses on the identification of protein-protein interactions
 within the **endoplasmic** reticulum (**ER**) and **ER**
 -derived protein bodies. The methods described here were optimized for
 anal. of interactions among the **ER**-resident protein, **BiP**
 , and storage proteins of **maize** and soybean. With slight
 modification, however, they should also be adaptable for studying
 protein-protein interactions involving any protein for which antibodies
 are available.

L10 ANSWER 55 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 AN 1996:386105 BIOSIS
 DN PREV199699108461
 TI A soybean binding protein (**BiP**) homolog is temporally regulated
 in soybean seeds and associates detectably with normal storage proteins in
 vitro.
 AU Fontes, Elizabeth P. B. (1); Silva, Carlos J.; Carolino, Sonia M. B.;
 Figueiredo, Jose Edson F.; Batista, Daria P. O.
 CS (1) BIOAGRO/Dep. Bioquim., Univ. Fed. Vicosa, 36570-000 Micosá, MG Brazil
 SO Brazilian Journal of Genetics, (1996) Vol. 19, No. 2, pp. 305-312.
 DT Article
 LA English
 SL English; Portuguese
 AB The **endoplasmic** reticulum (**ER**) luminal binding protein
 (**BiP**) is thought to be a key mediator of folding and assembly of
 de novo synthesized secretory proteins. We have used a **maize**
 (*Zea mays* L.) **BiP** antibody to identify its homolog in soybeans
 (*Glycine max* (L.) Merrill). The accumulation of **BiP** in
 developing soybean seeds seems to be coordinated with the onset of active
 storage protein synthesis. We used a co-immunoprecipitation assay to
 detect soybean **BiP**: beta-conglycinin interactions. Either a
maize BiP antibody or a beta-conglycinin antibody
 co-immunoprecipitated the reciprocal protein from whole seed protein
 extract enzymatically depleted of adenosine 5'-triphosphate (ATP), while
 an unrelated antibody failed to immunoprecipitate either one. The
 association of **BiP**:beta-conglycinin complexes was completely
 reversed by addition of ATP, a diagnostic feature of molecular
 chaperone-mediated interaction. However, only a very small fraction of
 beta-conglycinin was found to be associated with **BiP** in whole
 cell protein extracts from immature seeds. These results are consistent
 with a transient association between **BiP** and beta-conglycinin
 subunits, and suggests its involvement in the biosynthetic transport
 pathway of storage proteins to protein bodies.

L10 ANSWER 51 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1998:110326 CAPLUS
 DN 128:202982
 TI **Plant BiP** proteins
 AU Gillikin, Jeffrey W.; Boston, Rebecca S.
 CS Department of Botany, North Carolina State University, Raleigh, NC,
 27695-7612, USA
 SO Guidebook to Molecular Chaperones and Protein-Folding Catalysts (1997),
 38-41. Editor(s): Gething, Mary-Jane. Publisher: Oxford University Press,
 Oxford, UK.
 CODEN: 65RBAT
 DT Conference; General Review
 LA English
 AB A review with 28 refs. **Plant BiP** is the **ER**
 -localized member of the HSP70 family of proteins and is encoded by a
 multigene family in some, but not all **plant** species.
BiP is involved in such vital functions as protein translocation,
 assembly of proteins into oligomeric structures and suppression of protein
 aggregation.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> logoff hold

STN INTERNATIONAL SESSION SUSPENDED AT 15:57:50 ON 10 OCT 2003

FILE 'HOME' ENTERED AT 10:57:09 ON 24 FEB 2003

=> file agricola biosis caplus caba

=> s bip

L1 2872 BIP

=> s l1 and tobacco

L2 65 L1 AND TOBACCO

=> duplicate remove l2

L4 30 DUPLICATE REMOVE L2 (35 DUPLICATES REMOVED)

=> d ti 1-30

L4 ANSWER 1 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
TI ER-resident chaperone interactions with recombinant antibodies in transgenic plants.

L4 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2
TI Tissue-specific regulation of **BiP** genes: a cis-acting regulatory domain is required for **BiP** promoter activity in plant meristems

L4 ANSWER 3 OF 30 CABA COPYRIGHT 2003 CABI
TI Influence of KDEL on the fate of trimeric or assembly-defective phaseolin: selective use of an alternative route to vacuoles.

L4 ANSWER 4 OF 30 CAPLUS COPYRIGHT 2003 ACS
TI The Ca²⁺ status of the endoplasmic reticulum is altered by induction of calreticulin expression in transgenic plants

L4 ANSWER 5 OF 30 AGRICOLA DUPLICATE 3
TI Enhanced accumulation of **BiP** in transgenic plants confers tolerance to water stress.

L4 ANSWER 6 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Do Arabidopsis suspension cells constitute a suitable model cell system for protein trafficking studies.

L4 ANSWER 7 OF 30 CABA COPYRIGHT 2003 CABI
TI [Biological and integrated protection of ornamental crops in France: results of a year 2000 survey].
La protection biologique et integree en cultures ornementales en France: resultats de l'enquete 2000.

L4 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2003 ACS
TI Shortening of plant pathogen resistance response by overexpression of luminal binding protein

L4 ANSWER 9 OF 30 CAPLUS COPYRIGHT 2003 ACS
TI Methods for controlling viral diseases in plants involving expression of aptamers for modulation of transcription

L4 ANSWER 10 OF 30 CABA COPYRIGHT 2003 CABI
TI Replication of **tobacco** mosaic virus on endoplasmic reticulum and role of the cytoskeleton and virus movement protein in intracellular distribution of viral RNA.

L4 ANSWER 11 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
TI Misfolding and aggregation of vacuolar glycoproteins in plant cells.

L4 ANSWER 12 OF 30 AGRICOLA DUPLICATE 5
TI Accumulation of maize gamma-zein and gamma-zein: KDEL to high levels in **tobacco** leaves and differential increase of **BiP** synthesis in transformants.

L4 ANSWER 13 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI **BiP** recognition properties and activity in the endoplasmic reticulum.

L4 ANSWER 14 OF 30 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 6
TI Saturation of the endoplasmic reticulum retention machinery reveals anterograde bulk flow

L4 ANSWER 15 OF 30 CABA COPYRIGHT 2003 CABI
TI Anticipating endoplasmic reticulum stress: a novel early response before pathogenesis-related gene induction.

L4 ANSWER 16 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
TI Replication of **tobacco** mosaic virus on endoplasmic reticulum and role of the cytoskeleton and virus movement protein in intracellular distribution of viral RNA.

L4 ANSWER 17 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
TI Glycosylation and its adequate processing is critical for protein

secretion in tobacco BY2 cells.

L4 ANSWER 18 OF 30 AGRICOLA DUPLICATE 9
TI Overexpression of BiP in tobacco alleviates
endoplasmic reticulum stress.

L4 ANSWER 19 OF 30 CABA COPYRIGHT 2003 CABI
TI BiP and calreticulin form an abundant complex that is
independent of endoplasmic reticulum stress.

L4 ANSWER 20 OF 30 AGRICOLA DUPLICATE 10
TI Protein quality control along the route to the plant vacuole. [Erratum:
Apr 1998, v. 10 (4), p. 639.]

L4 ANSWER 21 OF 30 AGRICOLA DUPLICATE 11
TI The C-terminal HDEL sequence is sufficient for retention of secretory
proteins in the endoplasmic reticulum (ER) but promotes vacuolar targeting
of proteins that escape the ER.

L4 ANSWER 22 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI N-ethylmaleimide inactivates a nucleotide-free Hsp70 molecular chaperone.

L4 ANSWER 23 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. DUPLICATE
TI Transport and deposition of cereal prolamins.

L4 ANSWER 24 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. DUPLICATE
TI Structure, assembly and targeting of wheat storage proteins.

L4 ANSWER 25 OF 30 AGRICOLA DUPLICATE 14
TI The tobacco homolog of mammalian calreticulin is present in
protein complexes in vivo.

L4 ANSWER 26 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. DUPLICATE
TI Binding of BiP to an assembly-defective protein in plant cells.

L4 ANSWER 27 OF 30 AGRICOLA DUPLICATE 16
TI Analysis of sorting signals responsible for the accumulation of soluble
reticuloplasmins in the plant endoplasmic reticulum.

L4 ANSWER 28 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI IDENTIFICATION OF A SPINACH BiP WHICH SHOWS UPREGULATION DURING
COLD ACCLIMATION.

L4 ANSWER 29 OF 30 AGRICOLA DUPLICATE 17
TI The tobacco luminal binding protein is encoded by a multigene
family.

L4 ANSWER 30 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI THE PUTATIVE PLANT HOMOLOGUE OF THE MAMMALIAN LUMINAL BINDING PROTEIN
BiP IS ENCODED BY A MULTIGENE FAMILY IN TOBACCO.

=> d bib abs 30 29 18

L4 ANSWER 30 OF 30 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1991:197366 BIOSIS
DN BR40:94646
TI THE PUTATIVE PLANT HOMOLOGUE OF THE MAMMALIAN LUMINAL BINDING PROTEIN
BiP IS ENCODED BY A MULTIGENE FAMILY IN TOBACCO.
AU DENECKE J; GOLDMAN M H S; SEURINCK J; BOTTERMAN J
CS DEP. MOLECULAR GENETICS, SWED. UNIV. AGRIC. SCI., S-750 07 UPPSALA,
SWEDEN.
SO SYMPOSIUM ON THE GENETIC DISSECTION OF PLANT CELL PROCESSES HELD AT THE
20TH ANNUAL MEETING OF THE KEYSTONE SYMPOSIA ON MOLECULAR AND CELLULAR
BIOLOGY, KEYSTONE, COLORADO, USA, JANUARY 10-17, 1991. J CELL BIOCHEM
SUPPL. (1991) 0 (15 PART A), 69.
CODEN: JCBSD7.
DT Conference
FS BR; OLD
LA English

L4 ANSWER 29 OF 30 AGRICOLA DUPLICATE 17
AN 92:22566 AGRICOLA
DN IND92005406
TI The tobacco luminal binding protein is encoded by a multigene
family.
AU Denecke, J.; Goldman, M.H.S.; Demolder, J.; Seurinck, J.; Botterman, J.
CS Swedish University of Agricultural Sciences, Uppsala, Sweden
AV DNAL (QK725.P532)
SO The Plant cell, Sept 1991. Vol. 3, No. 9. p. 1025-1035
Publisher: Rockville, Md. : American Society of Plant Physiologists.
ISSN: 1040-4651
NTE Includes references.
DT Article
FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB We have cloned cDNAs of the tobacco homolog of the luminal binding protein (BiP) that has been described in other higher eukaryotes. In contrast to the mammalian and yeast protein, tobacco BiP is encoded by a multigene family. The gene products of all the cloned members of this family contain a carboxy-terminal His-Asp-Glu-Leu peptide that may form the signal for retention in the endoplasmic reticulum. Analysis of expression patterns revealed that BiP transcripts are predominantly present in tissues with high rates of cell divisions, in secretory tissues, and in cells treated with tunicamycin. We also show that a chimeric gene containing the coding region of one of the tobacco BiP genes is able to complement a mutation in the *Saccharomyces cerevisiae* BiP gene.

L4 ANSWER 18 OF 30 AGRICOLA DUPLICATE 9

AN 1999:75979 AGRICOLA

DN IND22010589

TI Overexpression of BiP in tobacco alleviates endoplasmic reticulum stress.

AU Leborgne-Castel, N.; Jelitto-Van Dooren, E.P.W.M.; Crofts, A.J.; Denecke, J.

CS Universite de Bourgogne, Dijon, France.

SO The Plant cell, Mar 1999. Vol. 11, No. 3. p. 459-469
 Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
 CODEN: PLCEEW; ISSN: 1040-4651

NTE Includes references

CY Maryland; United States

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB To study the role of the luminal binding protein (BiP) in the transport and secretion of proteins, we have produced plants with altered BiP levels. Transgenic plants overexpressing BiP showed dramatically increased BiP mRNA levels but only a modest increase in BiP protein levels. The presence of degradation products in BiP overproducers suggests a regulatory mechanism that increases protein turnover when BiP is abundant. Antisense inhibition of BiP synthesis was not successful, demonstrating that even a minor reduction in the basal BiP level is deleterious to cell viability. Overexpression of BiP leads to downregulation of the basal transcript levels of endogenous BiP genes and greatly reduces the unfolded protein response. The data confirm that BiP transcription is regulated via a feedback mechanism that involves monitoring of BiP protein levels. To test BiP activity in vivo, we designed a functional assay, using the secretory protein alpha-amylase and a cytosolic enzyme as a control for cell viability. During tunicamycin treatment, an overall reduction of alpha-amylase synthesis was observed when compared with the cytosolic marker. We show that the tunicamycin effect is due to the depletion of BiP in the endoplasmic reticulum because coexpressed BiP alone is able to restore efficient alpha-amylase synthesis. This is a novel assay to monitor BiP activity in promoting secretory protein synthesis in vivo.

=> d bib abs 8 5

L4 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2000:421326 CAPLUS

DN 133:56155

TI Shortening of plant pathogen resistance response by overexpression of luminal binding protein

IN Denecke, Jurgen; Jelitto, Edith

PA The University of York, UK

SO PCT Int. Appl., 60 pp.
 CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000036128	A1	20000622	WO 1999-GB4141	19991214
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1141348	A1	20011010	EP 1999-959553	19991214
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRAI GB 1998-27480 A 19981215
WO 1999-GB4141 W 19991214

AB The present invention provides a method of reducing the period within which a plant's natural defense mechanism responds to attack by a plant pathogen, the method comprising causing the plant to maintain in at least a part of the plant a level of the luminal binding protein (BiP), or a homolog thereof, which is greater than the endogenous level for said plant in non-stressful conditions. Overexpression of BiP, its ATPase domain, or calreticulin driven by a strong constitutive promoter and addnl. treatment with salicylic acid (SA), are used. A method of increasing the capacity for secretory protein synthesis including PR genes is also claimed. The invention also provides for a modified plant produced by the method of the invention. To study the role of BiP in the transport and secretion of proteins, plants with altered BiP levels were produced. Strengthening of the SA-mediated induction of pathogen resistance (PR) gene, PR1 was obsd. with overexpression of BiP driven by CaMV 35S promoter in transgenic tobacco and Arabidopsis thaliana.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 30 AGRICOLA DUPLICATE 3

AN 2002:9282 AGRICOLA

DN IND23249677

TI Enhanced accumulation of BiP in transgenic plants confers tolerance to water stress.

AU Alvim, F.C.; Carolino, S.M.B.; Cascardo, J.C.M.; Nunes, C.C.; Martinez, C.A.; Otoni, W.C.; Fontes, E.P.B.

AV DNAL (450 P692)

SO Plant physiology, July 2001. Vol. 126, No. 3. p. 1042-1054

Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-
CODEN: PLPHAY; ISSN: 0032-0889

NTE Includes references

CY Maryland; United States

DT Article; Conference

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB The binding protein (BiP) is an important component of endoplasmic reticulum stress response of cells. Despite extensive studies in cultured cells, a protective function of BiP against stress has not yet been demonstrated in whole multicellular organisms. Here, we have obtained transgenic tobacco (Nicotiana tabacum L. cv Havana) plants constitutively expressing elevated levels of BiP or its antisense cDNA to analyze the protective role of this endoplasmic reticulum luminal stress protein at the whole plant level. Elevated levels of BiP in transgenic sense lines conferred tolerance to the glycosylation inhibitor tunicamycin during germination and tolerance to water deficit during plant growth. Under progressive drought, the leaf BiP levels correlated with the maintenance of the shoot turgidity and water content. The protective effect of BiP overexpression against water stress was disrupted by expression of an antisense BiP cDNA construct. Although overexpression of BiP prevented cellular dehydration, the stomatal conductance and transpiration rate in droughted sense leaves were higher than in control and antisense leaves. The rate of photosynthesis under water deficit might have caused a degree of greater osmotic adjustment in sense leaves because it remained unaffected during water deprivation, which was in marked contrast with the severe drought-induced decrease in the CO2 assimilation in control and antisense leaves. In antisense plants, the water stress stimulation of the antioxidative defenses was higher than in control plants, whereas in droughted sense leaves an induction of superoxide dismutase activity was not observed. These results suggest that overexpression of BiP in plants may prevent endogenous oxidative stress.

=> logoff hold

STN INTERNATIONAL SESSION SUSPENDED AT 11:02:14 ON 24 FEB 2003

FILE 'HOME' ENTERED AT 15:30:05 ON 10 OCT 2003

=> file agricola biosis caplus caba

=> s bip

L1 3096 BIP

=> s l1 and luminal binding protein

L2 24 L1 AND LUMENAL BINDING PROTEIN

=> duplicate remove l2

L3 8 DUPLICATE REMOVE L2 (16 DUPLICATES REMOVED)

=> d ti 1-8

L3 ANSWER 1 OF 8 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI ER quality control can lead to retrograde transport from the ER lumen to the cytosol and the nucleoplasm in plants.

L3 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Shortening of plant pathogen resistance response by overexpression of **luminal binding protein**

L3 ANSWER 3 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 2
 TI Saturation of the endoplasmic reticulum retention machinery reveals anterograde bulk flow.

L3 ANSWER 4 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 3
 TI Anticipating endoplasmic reticulum stress: a novel early response before pathogenesis-related gene induction.

L3 ANSWER 5 OF 8 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Replication of tobacco mosaic virus on endoplasmic reticulum and role of the cytoskeleton and virus movement protein in intracellular distribution of viral RNA.

L3 ANSWER 6 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 5
 TI Overexpression of BiP in tobacco alleviates endoplasmic reticulum stress.

L3 ANSWER 7 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 6
 TI The tobacco homolog of mammalian calreticulin is present in protein complexes in vivo.

L3 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
 TI The use of protoplasts to study protein synthesis and transport by the plant endomembrane system

=> d bib abs 7 8

L3 ANSWER 7 OF 8 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 6

AN 95:47908 AGRICOLA
 DN IND20471286
 TI The tobacco homolog of mammalian calreticulin is present in protein complexes in vivo.

AU Denecke, J.; Carlsson, L.E.; Vidal, S.; Hoglund, A.S.; Ek, B.; Zeijl, M.J. van.; Sinjorgo, K.M.C.; Palva, E.T.
 CS University of York, Heslington, York, UK.
 AV DNAL (QK725.P532)
 SO The Plant cell, Apr 1995. Vol. 7, No. 4. p. 391-406
 Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
 CODEN: PLCEEW; ISSN: 1040-4651

NTE Includes references
 CY Maryland; United States
 DT Article
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English
 AB The analysis of protein sorting signals responsible for the retention of reticuloplasmins (RPLs) a group of soluble proteins that reside in the lumen of the endoplasmic reticulum (ER) has revealed a structural similarity between mammalian and plant ER retention signals. We present evidence that the corresponding epitope is conserved in a vast family of soluble ER resident proteins. Microsequences of RPL60 and RPL90 two abundant members of this family show high sequence similarity with mammalian calreticulin and endoplasmin. RPL60/calreticulin cofractionates and costains with the **luminal binding protein** (BiP). Both proteins were detected in the nuclear envelope and the ER and in mitotic cells in association with the spindle apparatus and the phragmoplast. Immunoprecipitation of proteins from in vivo-labeled cells demonstrated that RPL60/calreticulin is associated with other polypeptides in a stress- and ATP-dependent fashion. RPL60/calreticulin transcript levels increased rapidly in abundance during the proliferation of the secretory apparatus and the onset of hydrolase secretion in

gibberellic acid-treated barley aleurone cells. This induction profile is identical to that of the well-characterized ER chaperones BiP and endoplasmic reticulum chaperonin. However expression patterns in response to different stress conditions as well as tissue-specific expression patterns indicate that these genes are differentially regulated and may not act in concert.

L3 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 1995:964677 CAPLUS
 DN 124:24937
 TI The use of protoplasts to study protein synthesis and transport by the plant endomembrane system
 AU Denecke, Juergen; Vitale, Alessandro
 CS Uppsala Genetic Center, Swedish University of Agricultural Sciences, Uppsala, S-75007, Swed.
 SO Methods in Cell Biology (1995), 50, 335-48
 CODEN: MCBLAG; ISSN: 0091-679X
 DT Journal; General Review
 LA English
 AB A review with 8 refs. Topics discussed include: transient expression of genes in plant protoplasts, evaluation of in vivo protein folding in the endoplasmic reticulum by monitoring interaction with lumenal binding protein (BiP), and protein transport through the endomembrane system.

=> s l1 and calreticulin
 L4 165 L1 AND CALRETICULIN

=> duplicate remove l4
 L5 94 DUPLICATE REMOVE L4 (71 DUPLICATES REMOVED)

=> d ti 1-25

L5 ANSWER 1 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Genes that are differentially expressed during erythropoiesis and their diagnostic and therapeutic uses

L5 ANSWER 2 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Methods of recovering chaperone proteins and complexes thereof

L5 ANSWER 3 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Nascent lipidated apolipoprotein B is transported to the Golgi as an incompletely folded intermediate as probed by its association with network of endoplasmic reticulum molecular chaperones, GRP94, ERp72, BiP, calreticulin, and cyclophilin B.

L5 ANSWER 4 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI The interplay between folding-facilitating mechanisms in Trypanosoma cruzi endoplasmic reticulum

L5 ANSWER 5 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Apolipoprotein(a) secretion from hepatoma cells is regulated in a size-dependent manner by alterations in disulfide bond formation.

L5 ANSWER 6 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Defective secretion of recombinant fragments of fibrillin-1: Implications of protein misfolding for the pathogenesis of Marfan syndrome and related disorders.

L5 ANSWER 7 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Compromised calnexin function in calreticulin-deficient cells

L5 ANSWER 8 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 4
 TI Carbonylation of ER chaperone proteins in aged mouse liver.

L5 ANSWER 9 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Folding of thyroglobulin in the calnexin/calreticulin pathway and its alteration by loss of Ca2+ from the endoplasmic reticulum.

L5 ANSWER 10 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Genomic analysis of Arabidopsis gene expression in response to a systemic fungicide

L5 ANSWER 11 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI UDP-Glc:glycoprotein glucosyltransferase recognizes structured and solvent accessible hydrophobic patches in molten globule-like folding intermediates.

L5 ANSWER 12 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Chaperones and folding of MHC class I molecules in the endoplasmic reticulum.

L5 ANSWER 13 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Methods and compositions for inhibiting thrombin generation at the surface

of cells using endoplasmic reticulum-associated chaperonins

- L5 ANSWER 14 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Regulation of **calreticulin** expression during induction of
differentiation in human myeloid cells. Evidence for remodeling of the
endoplasmic reticulum.
- L5 ANSWER 15 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Association of calnexin with mutant peripheral myelin protein-22 ex vivo:
A basis for "gain-of-function" ER diseases.
- L5 ANSWER 16 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI ER-resident chaperone interactions with recombinant antibodies in
transgenic plants.
- L5 ANSWER 17 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Association of the thyrotropin receptor with calnexin,
calreticulin and **BiP**. Effects on the maturation of the
receptor.
- L5 ANSWER 18 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI A subset of chaperones and folding enzymes form multiprotein complexes in
endoplasmic reticulum to bind nascent proteins.
- L5 ANSWER 19 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
TI Quality control mechanism for membrane glycoproteins by endoplasmic
reticulum molecular chaperones
- L5 ANSWER 20 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Evidence of endoplasmic reticulum stress and unfolded protein response in
inclusion body myositis (IBM) muscle.
- L5 ANSWER 21 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Molecular chaperones and virus glycoproteins.
- L5 ANSWER 22 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI ER quality control and its stress response.
- L5 ANSWER 23 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 13
TI Cytoskeleton-dependent changes in the structural organization of
reticuloplasmins in *Triticum aestivum* cells during cold acclimation and
treatment with abscisic acid
- L5 ANSWER 24 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI MICROARRAY ANALYSIS OF GENE EXPRESSION DURING Er STRESS - INDUCED
APOPTOSIS IN HUMAN NEUROBLASTOMA CELLS.
- L5 ANSWER 25 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Intracellular Traffic of Human FIX during Its Biosynthesis.

=> d bib abs 16 10

- L5 ANSWER 16 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AN 2003:72340 BIOSIS
DN PREV200300072340
TI ER-resident chaperone interactions with recombinant antibodies in
transgenic plants.
- AU Nuttall, James; Vine, Nicholas; Hadlington, Jane L.; Drake, Pascal;
Frigerio, Lorenzo; Ma, Julian K.-C. (1)
- CS (1) Unit of Immunology, Department of Oral Medicine and Pathology, Guy's
Hospital, London, SE1 9RT, UK: 1.frigerio@warwick.ac.uk,
julian.ma@kcl.ac.uk UK
- SO European Journal of Biochemistry, (December 2002, 2002) Vol. 269, No. 24,
pp. 6042-6051. print.
ISSN: 0014-2956.
- DT Article
LA English
AB In this study, we demonstrate that the folding and assembly of IgG in
transgenic tobacco plants is orchestrated by **BiP** (binding
protein), an endoplasmic reticulum resident chaperone. Expression of
BiP and **calreticulin** was examined in transgenic tobacco
plants that express immunoglobulin chains, either singly or in combination
to form IgG antibody. **BiP** mRNA expression was lowest in
wild-type nontransformed plants and those that expressed immunoglobulin
light chain alone. Higher mRNA levels were detected in plants expressing
fully assembled immunoglobulin (light and heavy chains), and the most
abundant levels of RNA transcript were found in those plants that
expressed immunoglobulin heavy chain alone. Estimation of total
BiP demonstrated a similar pattern, with the highest levels
detected in plants expressing immunoglobulin heavy chain alone.
Immunoprecipitation studies demonstrated that **BiP** was associated
with immunoglobulin chains extracted from protoplast lysates, but not from
secreted fluids. Again, most **BiP** was coprecipitated from plants
expressing heavy chain only and those that produced full length IgG. The

binding of BiP to Ig heavy chains was ATP-sensitive. Co-expression of heavy and light chain resulted in IgG assembly and displacement of BiP from the heavy chain as the amount of light chain increased. Although calreticulin mRNA and total protein levels varied in a similar manner to those of BiP in the transgenic plants, there was no evidence for association between calreticulin and Ig chains, by coimmunoprecipitation. The results indicate that BiP, but not calreticulin, takes part in immunoglobulin folding and assembly in transgenic plants.

L5 ANSWER 10 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2003:553936 CAPLUS
 DN 139:192289
 TI Genomic analysis of Arabidopsis gene expression in response to a systemic fungicide
 AU Chuang, Huey-wen; Hsieh, Tzung-Fu; Duval, Manuel; Thomas, Terry L.
 CS Texas A+M University, College Station, TX, USA
 SO Mycology Series (2003), 18(Genomics of Plants and Fungi), 237-253
 CODEN: MYSEDX; ISSN: 0730-9597
 PB Marcel Dekker, Inc.
 DT Journal
 LA English
 AB Fosetyl (aluminum Et phosphate) is a systemic fungicide that is widely used to control plant Oomycetes in the field. Molina et. al. demonstrated that fosetyl fungicidal activity was affected by plant defense signal transduction pathways. This suggested that, in addn. to its direct fungicidal activity, fosetyl modulates expression of plant genes involved in pathogen defense, for example, fosetyl induces the SAR marker gene PR-1. Here, the authors have combined SSH (suppressive subtractive hybridization) and cDNA microarrays to detect alterations in gene expression patterns of fosetyl-treated Arabidopsis. They show that fosetyl is a potent inducer of plant defense responses. The induction patterns resemble that of microbial elicitors and involve multiple defense signaling pathways. Six genes with fosetyl-induction ratios ranging from 2.6-9.7 in Northern blot expts. were identified. These genes encode PR proteins (PR-1, PR-2, and PR-4), a mol. chaperone (cyclophilin), and a non-specific lipid transfer protein (nsLTP). Genes encoding antioxidants (GSTs), mol. chaperones (BiP and calreticulin), and a cell wall component (extensin) were identified by using subtractive cDNA probes to screen Arabidopsis EST arrays.
 RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ti 26-50

L5 ANSWER 26 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI TcSCA complements yeast mutants defective in Ca2+ pumps and encodes a Ca2+-ATPase that localizes to the endoplasmic reticulum of Trypanosoma cruzi.

L5 ANSWER 27 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Folding of hepatitis C virus E1 glycoprotein in a cell-free system.

L5 ANSWER 28 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A novel quality control compartment derived from the endoplasmic reticulum.

L5 ANSWER 29 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI The Ca2+ status of the endoplasmic reticulum is altered by induction of calreticulin expression in transgenic plants

L5 ANSWER 30 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 17
 TI Distinct differences in association of MHC class I with endoplasmic reticulum proteins in wild-type, and beta2-microglobulin- and TAP-deficient cell lines.

L5 ANSWER 31 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A sub-set of chaperones and folding enzymes form multi-protein complexes in the ER to bind nascent proteins.

L5 ANSWER 32 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Molecular chaperones interact with the thiazide-sensitive Na-Cl cotransporter.

L5 ANSWER 33 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Folding and bioassembly of seretory proteins in health and disease.

L5 ANSWER 34 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Depolarisation-evoked Ca2+ waves in the non-excitabile rat megakaryocyte.

L5 ANSWER 35 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Calreticulin, PDI, Grp94 and BiP chaperone proteins are associated with retained COMP in pseudoachondroplasia chondrocytes.

L5 ANSWER 36 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI The reticuloplazmins of ERP-Bip and calreticulin in
 Triticum aestivum L. seedlings treated by low temperature and oryzalin
 which is a antimitotic agent.

L5 ANSWER 37 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Do Arabidopsis suspension cells constitute a suitable model cell system
 for protein trafficking studies.

L5 ANSWER 38 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI The immunologic homunculus in rheumatoid arthritis: A new sight of
 immunopathogenesis of RA and its therapeutic implications.
 Original Title: Der Immunologische Homunculus bei der rheumatoiden
 Arthritis: Eine neue Sicht der Immunpathogenese der RA und deren
 therapeutische Konsequenzen..

L5 ANSWER 39 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Shortening of plant pathogen resistance response by overexpression of
 luminal binding protein

L5 ANSWER 40 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A novel von Willebrand disease-causing mutation (Arg273Trp) in the von
 Willebrand factor propeptide that results in defective multimerization and
 secretion.

L5 ANSWER 41 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Endoplasmic reticulum chaperones in calreticulin deficient mouse
 embryonic fibroblast cells.

L5 ANSWER 42 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Cellular autoimmunity in rheumatoid arthritis

L5 ANSWER 43 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Chaperone selection during glycoprotein translocation into the endoplasmic
 reticulum.

L5 ANSWER 44 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Endoplasmic reticulum proteins in calnexin deficient cells.

L5 ANSWER 45 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Different expression of calreticulin and immunoglobulin binding
 protein in Alzheimer's disease brain.

L5 ANSWER 46 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Association of thyrotropin receptor precursors with molecular chaperones.

L5 ANSWER 47 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Purification of multiple heat shock proteins from a single tumor sample.

L5 ANSWER 48 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Chaperone-assisted folding of glycoproteins within the endoplasmic
 reticulum.

L5 ANSWER 49 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Molecular chaperones stimulate the functional expression of the
 cocaine-sensitive serotonin transporter.

L5 ANSWER 50 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Autolysosomal membrane-associated betaine homocysteine methyltransferase:
 Limited degradation fragment of a sequestered cytosolic enzyme monitoring
 autophagy.

=> d bib abs 36 29

L5 ANSWER 36 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 AN 2002:111918 BIOSIS
 DN PREV200200111918
 TI The reticuloplazmins of ERP-Bip and calreticulin in
 Triticum aestivum L. seedlings treated by low temperature and oryzalin
 which is a antimitotic agent.
 AU Olinevich, O. V.; Khokhlova, L. P.; Raudaskoski, M.
 SO Doklady Akademii Nauk, (March, 2001) Vol. 377, No. 1, pp. 135-138. print.
 ISSN: 0869-5652.
 DT Article
 LA Russian

L5 ANSWER 29 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 AN 2001:552222 CAPLUS
 DN 135:254514
 TI The Ca²⁺ status of the endoplasmic reticulum is altered by induction of
 calreticulin expression in transgenic plants
 AU Persson, Staffan; Wyatt, Sarah E.; Love, John; Thompson, William F.;
 Robertson, Dominique; Boss, Wendy F.

CS Dep. of Bot., North Carolina State Univ., Raleigh, NC, 27695-7612, USA
SO Plant Physiology (2001), 126(3), 1092-1104
CODEN: PLPHAY; ISSN: 0032-0889

PB American Society of Plant Physiologists

DT Journal

LA English

AB To investigate the endoplasmic reticulum (ER) Ca²⁺ stores in plant cells, we generated tobacco (*Nicotiana tabacum*; NT1) suspension cells and *Arabidopsis* plants with altered levels of **calreticulin** (CRT), an ER-localized Ca²⁺-binding protein. NT1 cells and *Arabidopsis* plants were transformed with a maize (*Zea mays*) CRT gene in both sense and antisense orientations under the control of an *Arabidopsis* heat shock promoter. ER-enriched membrane fractions from NT1 cells were used to examine how altered expression of CRT affects Ca²⁺ uptake and release. We found that a 2.5-fold increase in CRT led to a 2-fold increase in ATP-dependent 45Ca²⁺ accumulation in the ER-enriched fraction compared with heat-shocked wild-type controls. Furthermore, after treatment with the Ca²⁺ ionophore ionomycin, ER microsomes from NT1 cells overproducing CRT showed a 2-fold increase in the amt. of 45Ca²⁺ released, and a 2- to 3-fold increase in the amt. of 45Ca²⁺ retained compared with wild type. These data indicate that altering the prodn. of CRT affects the ER Ca²⁺ pool. In addn., CRT transgenic *Arabidopsis* plants were used to det. if altered CRT levels had any physiol. effects. We found that the level of CRT in heat shock-induced CRT transgenic plants correlated pos. with the retention of chlorophyll when the plants were transferred from Ca²⁺-contg. medium to Ca²⁺-depleted medium. Together these data are consistent with the hypothesis that increasing CRT in the ER increases the ER Ca²⁺ stores and thereby enhances the survival of plants grown in low Ca²⁺ medium.

RE.CNT 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ti 51-75

L5 ANSWER 51 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN

TI **Calreticulin** displays in vivo peptide-binding activity and can elicit CTL responses against bound peptides

L5 ANSWER 52 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Transient association of calnexin and **calreticulin** with newly synthesized G1 and G2 glycoproteins of Uukuniemi virus (family Bunyaviridae).

L5 ANSWER 53 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Fibrillin assembly: Dimer formation mediated by amino-terminal sequences.

L5 ANSWER 54 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 29

TI Saturation of the endoplasmic reticulum retention machinery reveals anterograde bulk flow.

L5 ANSWER 55 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Kinetics of interactions of Sendai virus envelope glycoproteins, F and HN, with endoplasmic reticulum-resident molecular chaperones, **BiP**, calnexin, and **calreticulin**.

L5 ANSWER 56 OF 94 CABA COPYRIGHT 2003 CABI on STN

TI Molecular chaperones improve functional expression of the serotonin (5-hydroxytryptamine) transporter in insect cells.

L5 ANSWER 57 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Differential alteration of **calreticulin** and immunoglobulin binding proteins (**BiP**) in cerebral cortex of Alzheimer's disease brain.

L5 ANSWER 58 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 31

TI Maize **calreticulin** localizes preferentially to plasmodesmata in root apex.

L5 ANSWER 59 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Short-term culturing of low-grade superficial bladder transitional cell carcinomas leads to changes in the expression levels of several proteins involved in key cellular activities.

L5 ANSWER 60 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Possible molecular chaperones for lipoprotein lipase in endoplasmic reticulum.

L5 ANSWER 61 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Multiple molecular chaperones interact with apolipoprotein B during its

maturation: The network of endoplasmic reticulum-resident chaperones (ERp72, GRP94, **calreticulin**, and **BiP**) interacts with apolipoprotein B regardless of its lipidation state.

- L5 ANSWER 62 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Involvement of endoplasmic reticulum chaperones in the folding of hepatitis C virus glycoproteins.
- L5 ANSWER 63 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 36
TI **BiP** and **calreticulin** form an abundant complex that is independent of endoplasmic reticulum stress.
- L5 ANSWER 64 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Cell wall 1,6-beta-glucan synthesis in *Saccharomyces cerevisiae* depends on ER glucosidases I and II, and the molecular chaperone **BiP**/Kar2p.
- L5 ANSWER 65 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Role of ER-resident chaperones in the maturation of apolipoprotein B.
- L5 ANSWER 66 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI **BiP**, a major chaperone protein of the endoplasmic reticulum lumen, plays a direct and important role in the storage of the rapidly exchanging pool of Ca²⁺.
- L5 ANSWER 67 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
TI Subcellular fractionation of polarized epithelial cells and identification of organelle-specific proteins by two-dimensional gel electrophoresis
- L5 ANSWER 68 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Quality control in the secretory pathway: The role of **calreticulin**, calnexin and **BiP** in the retention of glycoproteins with C-terminal truncations.
- L5 ANSWER 69 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Overexpression of calsequestrin in L6 myoblasts: Formation of endoplasmic reticulum subdomains and their evolution into discrete vacuoles where aggregates of the protein are specifically accumulated.
- L5 ANSWER 70 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI The putative chaperone calmeglin is required for sperm fertility.
- L5 ANSWER 71 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Interaction between newly synthesized glycoproteins, calnexin and a network of resident chaperones in the endoplasmic reticulum.
- L5 ANSWER 72 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI Distribution of inositol 1,4,5-trisphosphate receptor isoforms, SERCA isoforms and Ca²⁺ binding proteins in RBL-2H3 rat basophilic leukemia cells.
- L5 ANSWER 73 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
TI Autolysosome membrane proteins: witness to ongoing autophagic process
- L5 ANSWER 74 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 44
TI A rapid increase in the level of binding protein (**BiP**) is accompanied by synthesis and degradation of storage proteins in pumpkin cotyledons.
- L5 ANSWER 75 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 45
TI Biosynthesis, assembly and secretion of coagulation factor VIII.

=> d bib abs 74 58

- L5 ANSWER 74 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 44
AN 1998:20173 AGRICOLA
DN IND20622569
TI A rapid increase in the level of binding protein (**BiP**) is accompanied by synthesis and degradation of storage proteins in pumpkin cotyledons.
AU Hatano, K.; Shimada, T.; Hiraiwa, N.; Nishimura, M.; Hara-Nishimura, I.
CS National Institute for Basic Biology, Okazaki, Japan.
SO Plant and cell physiology, Mar 1997. Vol. 38, No. 3. p. 344-351
Publisher: Kyoto, Japan : Japanese Society of Plant Physiologists.
CODEN: PCPHA5; ISSN: 0032-0781

NTE Includes references
 CY Japan
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English
 AB The binding protein (BiP) has been implicated in cotranslational folding of nascent polypeptides, and in the recognition and disposal of aberrant polypeptides. To elucidate the involvement of BiP in the biosynthesis of vacuolar proteins, we have characterized the protein in pumpkin cotyledons during seed maturation and seedling growth. Isolated microsomes from maturing pumpkin cotyledons contained a significant amount of BiP, protein-disulfide isomerase and calreticulin. We have purified a 70-kDa protein; sequences of the N-terminus and internal fragments of this protein exhibited a high identity to the sequence of soybean BiP. Immunoblot analysis with specific antibodies raised against the purified BiP showed that the amount of BiP in a cotyledon increased markedly at the middle stage and then decreased. The increase was accompanied by the synthesis of storage proteins and the development of the endoplasmic reticulum in the cotyledons at the middle stage of seed maturation. Most of these storage proteins degraded dramatically between 2 and 5 days after seed germination, and the degradation was also accompanied by a rapid increase in the level of BiP. Subcellular fractionation of the 4-day-old cotyledons showed a high accumulation of BiP in the endoplasmic reticulum. It is possible that BiP might be involved in the synthesis of seed storage proteins during maturation and in the synthesis of hydrolytic enzymes responsible for the degradation of the storage proteins during seed germination.

L5 ANSWER 58 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 31

AN 2000:39894 AGRICOLA
 DN IND22037796
 TI Maize calreticulin localizes preferentially to plasmodesmata in root apex.
 AU Baluska, F.; Samaj, J.; Napier, R.; Volkmann, D.
 CS University Bonn, Germany.
 SO The Plant journal : for cell and molecular biology, Aug 1999. Vol. 19, No. 4. p. 481-488
 Publisher: Oxford : Blackwell Sciences Ltd.
 ISSN: 0960-7412

NTE Includes references
 CY England; United Kingdom
 DT Article
 FS Non-U.S. Imprint other than FAO
 LA English
 AB Using a polyclonal antibody raised against calreticulin purified and sequenced from maize, we performed an immunocytological study to characterize putative domain-specific subcellular distributions of endoplasmic reticulum (ER)-resident calreticulin in meristematic cells of maize root tip. At the light microscopy level, calreticulin was immunolocalized preferentially at cellular peripheries, in addition to nuclear envelopes and cytoplasmic structures. Punctate labelling at the longitudinal walls and continuous labelling at the transverse walls was characteristic. Immunogold electron microscopy revealed plasmodesmata as the most prominently labelled cell periphery structure. In order to further probe the ER-domain-specific distribution of maize calreticulin at plasmodesmata, root apices were exposed to mannitol-induced osmotic stress. Plasmolysis was associated with prominent accumulations of calreticulin at callose-enriched plasmodesmata and pit fields while the contracting protoplasts were depleted of calreticulin. In contrast, other ER-resident proteins recognized by HDEL peptide and BiP antibodies localized exclusively to contracted protoplasts. This finding reveals that, in plasmolysed cells, calreticulin enriched ER domains at plasmodesmata and pit fields are depleted of other ER-resident proteins containing the HDEL retention peptide.

=> d ti 76-94

L5 ANSWER 76 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Multiple molecular chaperones interact with apolipoprotein B during its maturation.

L5 ANSWER 77 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Endoplasmic reticulum form of calreticulin modulates glucocorticoid-sensitive gene expression.

L5 ANSWER 78 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Mutations in the carboxyl-terminal hydrophobic sequence of human cytomegalovirus glycoprotein B alter transport and protein chaperone binding.

L5 ANSWER 79 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A microsomal ATP-binding protein involved in efficient protein transport into the mammalian endoplasmic reticulum.

L5 ANSWER 80 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Role of chaperones in the maturation of nascent transferrin in a cell-free system.

L5 ANSWER 81 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Interaction of newly synthesized apolipoprotein B with molecular chaperones in the endoplasmic reticulum.

L5 ANSWER 82 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Calnexin, calreticulin, and Bip/Kar2p in protein folding.

L5 ANSWER 83 OF 94 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Calnexin, calreticulin, and Bip/Kar2p in protein folding

L5 ANSWER 84 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 49
 TI The tobacco homolog of mammalian calreticulin is present in protein complexes in vivo.

L5 ANSWER 85 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A set of endoplasmic reticulum proteins possessing properties of molecular chaperones includes Ca-2+-binding proteins and members of the thioredoxin superfamily.

L5 ANSWER 86 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A single purification procedure for the major resident proteins of the ER lumen: Endoplasmic reticulum chaperonin, BiP, calreticulin and protein disulfide isomerase.

L5 ANSWER 87 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Hormonal regulation of protein disulfide isomerase and chaperone synthesis in the rat exocrine pancreas.

L5 ANSWER 88 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 53
 TI Endoplasmic reticulum luminal proteins of rat mammary gland. Potential involvement in lipid droplet assembly during lactation.

L5 ANSWER 89 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Sarcoplasmic reticulum proteins: Distribution and abundance of calreticulin, Ca-2+-ATPase and BiP in aortic and coronary smooth muscle cells.

L5 ANSWER 90 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI The endoplasmic-sarcoplasmic reticulum of smooth muscle: Immunocytochemistry of vas deferens fibers reveals specialized subcompartments differently equipped for the control of calcium homeostasis.

L5 ANSWER 91 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 55
 TI Analysis of sorting signals responsible for the accumulation of soluble reticuloplasmins in the plant endoplasmic reticulum.

L5 ANSWER 92 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Intracellular calcium stores of rat cerebellum: Heterogeneity within and distinction from endoplasmic reticulum.

L5 ANSWER 93 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI The endoplasmic reticulum-sarcoplasmic reticulum connection: II. Postnatal differentiation of the sarcoplasmic reticulum in skeletal muscle fibers.

L5 ANSWER 94 OF 94 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Differential expression of markers and activities in a group of PC12 nerve cell clones.

=> d bib abs 84

L5 ANSWER 84 OF 94 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.

(2003) on STN
 AN 95:47908 AGRICOLA
 DN IND20471286
 TI The tobacco homolog of mammalian **calreticulin** is present in protein complexes in vivo.
 AU Denecke, J.; Carlsson, L.E.; Vidal, S.; Hoglund, A.S.; Ek, B.; Zeijl, M.J. van.; Sinjorgo, K.M.C.; Palva, E.T.
 CS University of York, Heslington, York, UK.
 AV DNAL (QK725.P532)
 SO The Plant cell, Apr 1995. Vol. 7, No. 4. p. 391-406
 Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
 CODEN: PLCEEW; ISSN: 1040-4651
 NTE Includes references
 CY Maryland; United States
 DT Article
 FS U.S. Imprints not USDA, Experiment or Extension
 LA English
 AB The analysis of protein sorting signals responsible for the retention of reticuloplasmins (RPLs) a group of soluble proteins that reside in the lumen of the endoplasmic reticulum (ER) has revealed a structural similarity between mammalian and plant ER retention signals. We present evidence that the corresponding epitope is conserved in a vast family of soluble ER resident proteins. Microsequences of RPL60 and RPL90 two abundant members of this family show high sequence similarity with mammalian **calreticulin** and endoplasmin. RPL60/**calreticulin** cofractionates and costains with the luminal binding protein (**BiP**). Both proteins were detected in the nuclear envelope and the ER and in mitotic cells in association with the spindle apparatus and the phragmoplast. Immunoprecipitation of proteins from in vivo-labeled cells demonstrated that RPL60/**calreticulin** is associated with other polypeptides in a stress- and ATP-dependent fashion. RPL60/**calreticulin** transcript levels increased rapidly in abundance during the proliferation of the secretory apparatus and the onset of hydrolase secretion in gibberellic acid-treated barley aleurone cells. This induction profile is identical to that of the well-characterized ER chaperones **BiP** and endoplasmin. However expression patterns in response to different stress conditions as well as tissue-specific expression patterns indicate that these genes are differentially regulated and may not act in concert.

=> s bip and salicylic
 L6 12 BIP AND SALICYLIC

=> duplicate remove l6
 L7 5 DUPLICATE REMOVE L6 (7 DUPLICATES REMOVED)

=> d ti 1-5

L7 ANSWER 1 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Salicylate and methyl jasmonate differentially influence diacetylene accumulation pattern in transformed roots of feverfew.

L7 ANSWER 2 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Aspirin and salicylate bind to immunoglobulin heavy chain binding protein (**BiP**) and inhibit its ATPase activity in human fibroblasts.

L7 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Shortening of plant pathogen resistance response by overexpression of luminal binding protein

L7 ANSWER 4 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Inhibitors of N-linked glycosylation induce systemic acquired resistance in cucumber.

L7 ANSWER 5 OF 5 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
 (2003) on STN DUPLICATE 4
 TI Anticipating endoplasmic reticulum stress: a novel early response before pathogenesis-related gene induction.

=> d bib abs 4 5

L7 ANSWER 4 OF 5 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 3

AN 2000:349760 BIOSIS
 DN PREV200000349760

TI Inhibitors of N-linked glycosylation induce systemic acquired resistance in cucumber.

AU Sticher, L. (1); Metraux, J.-P.

CS (1) Departement de Biologie, Unite Biologie Vegetale, Universite de Fribourg, 3 Rte A. Gockel, CH-1700, Fribourg Switzerland

SO Physiological and Molecular Plant Pathology, (June, 2000) Vol. 56, No. 6,
pp. 245-252. print.
ISSN: 0885-5765.

DT Article

LA English

SL English

AB Localized treatment of cucumber (*Cucumis sativus* L. cv. Wisonsin)
cotyledons with inhibitors of N-glycosylation such as tunicamycin or
amphotycin resulted in systemic acquired resistance in the first leaf to
the fungal pathogen *Colletotrichum lagenarium*. Resistance was maximal as
early as 2 days after application and best results were observed when the
inhibitor was used at 100 µM. The same treatment also induced
salicylic acid accumulation as well as the expression of chitinase
and a PR1-like protein. The systemic effect is not caused by the transport
of tunicamycin, since tunicamycin was not detected in the leaves. Within 2
h after application tunicamycin inhibited N-glycosylation, but not protein
synthesis as indicated by labelling experiments. The amount of large and
small subunits of ribulose-1,5-bisphosphate carboxylase/oxygenase
decreased after tunicamycin treatment and after pathogen inoculation and
the expression of BiP, a protein localized in the endoplasmic
reticulum was enhanced. The activation of defense reactions seems to be
dependent and sensitive to N-linked glycosylation.

L7 ANSWER 5 OF 5 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 4

AN 2000:52791 AGRICOLA

DN IND22054269

TI Anticipating endoplasmic reticulum stress: a novel early response before
pathogenesis-related gene induction.

AU Jelitto-Van Dooren, E.P.W.M.; Vidal, S.; Denecke, J.

CS University of Leeds, Leeds, United Kingdom.

AV DNAL (QK725.P532)

SO The Plant cell, Oct 1999. Vol. 11, No. 10. p. 1935-1943
Publisher: [Rockville, MD : American Society of Plant Physiologists,
c1989-
CODEN: PLCEEW; ISSN: 1040-4651

NTE Includes references

CY Maryland; United States

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB When it is attacked by a pathogen, a plant produces a range of
defense-related proteins. Many of these are synthesized by the rough
endoplasmic reticulum (RER) to be secreted from the cell or deposited in
vacuoles. Genes encoding endoplasmic reticulum (ER)-resident chaperones,
such as the luminal binding protein (BiP), are also induced
under these conditions. Here, we show that BiP induction occurs
systemically throughout the plant. Furthermore, this induction occurs
rapidly and precedes expression of genes encoding pathogenesis-related
(PR) proteins. The underlying signal transduction pathway was shown to be
independent of the signaling molecule salicylic acid and the
unfolded protein response pathway. In addition, BiP induction
was independent of PR gene induction. Overproduction of BiP
alone was not sufficient to cause induction of PR gene expression;
however, limiting the amount of BiP in the ER lumen via
superimposed ER stress inhibited the induction of PR gene expression. We
propose that the induction of BiP expression during
plant-pathogen interactions is required as an early response to support PR
protein synthesis on the RER and that a novel signal transduction pathway
exists to trigger this rapid response.

=> s bip and (plant or tobacco or maize or pumpkin or rice or arabidopsis)

L8 457 BIP AND (PLANT OR TOBACCO OR MAIZE OR PUMPKIN OR RICE OR ARABIDO
PSIS)

=> s l8 and (ER or endoplasmic)

L9 211 L8 AND (ER OR ENDOPLASMIC)

=> duplicat remove l9

DUPLICATE PREFERENCE IS 'AGRICOLA, BIOSIS, CAPLUS, CABA'

KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L9

L10 85 DUPLICATE REMOVE L9 (126 DUPLICATES REMOVED)

=> d ti 1-8 l8

L8 ANSWER 1 OF 457 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN

TI Expression of an evolutionarily distinct novel BiP gene during
the unfolded protein response in *Arabidopsis thaliana*.

- L8 ANSWER 2 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI C-terminal extension of phaseolin with a short methionine-rich sequence can inhibit trimerisation and result in high instability.
- L8 ANSWER 3 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Tissue-specific regulation of BiP genes: a cis-acting regulatory domain is required for BiP promoter activity in **plant** meristems.
- L8 ANSWER 4 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI An endoplasmic reticulum-derived structure that is induced under stress conditions in **Arabidopsis**.
- L8 ANSWER 5 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI The Douglas-fir BiP promoter is functional in **Arabidopsis** and responds to wounding.
- L8 ANSWER 6 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Constituents of *Calea platylepis* Sch. Bip. ex Baker.
- L8 ANSWER 7 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Effect of recombination in the parent populations on the means and combining ability variances in hybrid populations of **maize** (*Zea mays* L.).
- L8 ANSWER 8 OF 457 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Enhanced expression of BiP is associated with treatments that extend storage longevity of primed tomato seeds.

=> d ti 1-25

- L10 ANSWER 1 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
- TI A system for intracellular process monitoring and in vivo drug screening
- L10 ANSWER 2 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
- TI Nucleoside diphosphatase and glycosyltransferase activities can localize to different subcellular compartments in *Schizosaccharomyces pombe*.
- L10 ANSWER 3 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 2
- TI C-terminal extension of phaseolin with a short methionine-rich sequence can inhibit trimerisation and result in high instability.
- L10 ANSWER 4 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
- TI **ER** quality control can lead to retrograde transport from the **ER** lumen to the cytosol and the nucleoplasm in plants.
- L10 ANSWER 5 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 4
- TI Expression of an evolutionarily distinct novel BiP gene during the unfolded protein response in **Arabidopsis thaliana**.
- L10 ANSWER 6 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 5
- TI *Trypanosoma cruzi* expresses a **plant**-like ascorbate-dependent hemoperoxidase localized to the **endoplasmic** reticulum.
- L10 ANSWER 7 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Coalescence of the sites of cowpea mosaic virus RNA replication into a cytopathic structure.

L10 ANSWER 8 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI ER-resident chaperone interactions with recombinant antibodies in transgenic plants.

L10 ANSWER 9 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
 TI An endoplasmic reticulum-derived structure that is induced under stress conditions in *Arabidopsis*.

L10 ANSWER 10 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 8
 TI Tissue-specific regulation of BiP genes: a cis-acting regulatory domain is required for BiP promoter activity in plant meristems.

L10 ANSWER 11 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 9
 TI Cytoskeleton-dependent changes in the structural organization of reticuloplasmins in *Triticum aestivum* cells during cold acclimation and treatment with abscisic acid

L10 ANSWER 12 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 10
 TI The ricinosomes of senescing plant tissue bud from the endoplasmic reticulum.

L10 ANSWER 13 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 11
 TI Influence of KDEL on the fate of trimeric or assembly-defective phaseolin: selective use of an alternative route to vacuoles.

L10 ANSWER 14 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 TI The Ca²⁺ status of the endoplasmic reticulum is altered by induction of calreticulin expression in transgenic plants

L10 ANSWER 15 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 12
 TI Enhanced accumulation of BiP in transgenic plants confers tolerance to water stress.

L10 ANSWER 16 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 13
 TI Hyperhydricity in in vitro eggplant regenerated plants: Structural characteristics and involvement of BiP (binding protein)

L10 ANSWER 17 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Comprehensive expression profile analysis of the *Arabidopsis* Hsp70 gene family

L10 ANSWER 18 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Protein disulfide isomerase is essential for accumulation of rice storage proteins into separate intracellular compartments.

L10 ANSWER 19 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Douglas fir BiP promoter is developmentally regulated and responds to mechanical wounding in *Arabidopsis thaliana*.

L10 ANSWER 20 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Identification of potato genes induced during colonization by *Phytophthora infestans*.

L10 ANSWER 21 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Do *Arabidopsis* suspension cells constitute a suitable model cell system for protein trafficking studies.

L10 ANSWER 22 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Shortening of plant pathogen resistance response by overexpression of luminal binding protein

L10 ANSWER 23 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Misfolding and aggregation of vacuolar glycoproteins in plant cells.

L10 ANSWER 24 OF 85 AGRICOLA Compiled and distributed by the National

Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 16

TI Accumulation of **maize** gamma-zein and gamma-zein: KDEL to high levels in **tobacco** leaves and differential increase of **BiP** synthesis in transformants.

L10 ANSWER 25 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI A potato alpha-glucosidase gene encodes a glycoprotein-processing alpha-glucosidase II-like activity. Demonstration of enzyme activity and effects of down-regulation in transgenic plants.

=> d bib abs 24 15 14

L10 ANSWER 24 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 16

AN 2001:9947 AGRICOLA

DN IND22081435

TI Accumulation of **maize** gamma-zein and gamma-zein: KDEL to high levels in **tobacco** leaves and differential increase of **BiP** synthesis in transformants.

AU Bellucci, M.; Alpini, A.; Paolocci, F.; Cong, L.; Arcioni, S.

AV DNAL (442.8 Z8)

SO Theoretical and applied genetics, Oct 2000. Vol. 101, No. 5/6. p. 796-804
Publisher: Berlin; Springer-Verlag
CODEN: THAGA6; ISSN: 0040-5752

NTE Includes references

CY West Berlin

DT Article

FS Non-U.S. Imprint other than FAO

LA English

L10 ANSWER 15 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 12

AN 2002:9282 AGRICOLA

DN IND23249677

TI Enhanced accumulation of **BiP** in transgenic plants confers tolerance to water stress.

AU Alvim, F.C.; Carolino, S.M.B.; Cascardo, J.C.M.; Nunes, C.C.; Martinez, C.A.; Otoni, W.C.; Fontes, E.P.B.

AV DNAL (450 P692)

SO Plant physiology, July 2001. Vol. 126, No. 3. p. 1042-1054
Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-
CODEN: PLPHAY; ISSN: 0032-0889

NTE Includes references

CY Maryland; United States

DT Article; Conference

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB The binding protein (**BiP**) is an important component of **endoplasmic** reticulum stress response of cells. Despite extensive studies in cultured cells, a protective function of **BiP** against stress has not yet been demonstrated in whole multicellular organisms. Here, we have obtained transgenic **tobacco** (*Nicotiana tabacum* L. cv Havana) plants constitutively expressing elevated levels of **BiP** or its antisense cDNA to analyze the protective role of this **endoplasmic** reticulum luminal stress protein at the whole **plant** level. Elevated levels of **BiP** in transgenic sense lines conferred tolerance to the glycosylation inhibitor tunicamycin during germination and tolerance to water deficit during **plant** growth. Under progressive drought, the leaf **BiP** levels correlated with the maintenance of the shoot turgidity and water content. The protective effect of **BiP** overexpression against water stress was disrupted by expression of an antisense **BiP** cDNA construct. Although overexpression of **BiP** prevented cellular dehydration, the stomatal conductance and transpiration rate in droughted sense leaves were higher than in control and antisense leaves. The rate of photosynthesis under water deficit might have caused a degree of greater osmotic adjustment in sense leaves because it remained unaffected during water deprivation, which was in marked contrast with the severe drought-induced decrease in the CO₂ assimilation in control and antisense leaves. In antisense plants, the water stress stimulation of the antioxidative defenses was higher than in control plants, whereas in droughted sense leaves an induction of superoxide dismutase activity was not observed. These results suggest that overexpression of **BiP** in plants may prevent endogenous oxidative stress.

L10 ANSWER 14 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

AN 2001:552222 CAPLUS

DN 135:254514

TI The Ca²⁺ status of the **endoplasmic** reticulum is altered by
 induction of calreticulin expression in transgenic plants
 AU Persson, Staffan; Wyatt, Sarah E.; Love, John; Thompson, William F.;
 Robertson, Dominique; Boss, Wendy F.
 CS Dep. of Bot., North Carolina State Univ., Raleigh, NC, 27695-7612, USA
 SO Plant Physiology (2001), 126(3), 1092-1104
 CODEN: PLPHAY; ISSN: 0032-0889
 PB American Society of Plant Physiologists
 DT Journal
 LA English
 AB To investigate the **endoplasmic** reticulum (ER) Ca²⁺
 stores in **plant** cells, we generated **tobacco** (Nicotiana
 tabacum; NT1) suspension cells and **Arabidopsis** plants with
 altered levels of calreticulin (CRT), an **ER**-localized
 Ca²⁺-binding protein. NT1 cells and **Arabidopsis** plants were
 transformed with a **maize** (Zea mays) CRT gene in both sense and
 antisense orientations under the control of an **Arabidopsis** heat
 shock promoter. **ER**-enriched membrane fractions from NT1 cells
 were used to examine how altered expression of CRT affects Ca²⁺ uptake and
 release. We found that a 2.5-fold increase in CRT led to a 2-fold
 increase in ATP-dependent ⁴⁵Ca²⁺ accumulation in the **ER**-enriched
 fraction compared with heat-shocked wild-type controls. Furthermore,
 after treatment with the Ca²⁺ ionophore ionomycin, **ER** microsomes
 from NT1 cells overproducing CRT showed a 2-fold increase in the amt. of
⁴⁵Ca²⁺ released, and a 2- to 3-fold increase in the amt. of ⁴⁵Ca²⁺
 retained compared with wild type. These data indicate that altering the
 prodn. of CRT affects the **ER** Ca²⁺ pool. In addn., CRT
 transgenic **Arabidopsis** plants were used to det. if altered CRT
 levels had any physiol. effects. We found that the level of CRT in heat
 shock-induced CRT transgenic plants correlated pos. with the retention of
 chlorophyll when the plants were transferred from Ca²⁺-contg. medium to
 Ca²⁺-depleted medium. Together these data are consistent with the
 hypothesis that increasing CRT in the **ER** increases the
ER Ca²⁺ stores and thereby enhances the survival of plants grown
 in low Ca²⁺ medium.
 RE.CNT 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d ti 26-50

L10 ANSWER 26 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Inhibitors of N-linked glycosylation induce systemic acquired resistance
 in cucumber.
 L10 ANSWER 27 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Characterization of Hsp93, a Hsp100 homologue in chloroplasts.
 L10 ANSWER 28 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI BiP recognition properties and activity in the
endoplasmic reticulum.
 L10 ANSWER 29 OF 85 AGRICOLA Compiled and distributed by the National
 Agricultural Library of the Department of Agriculture of the United States
 of America. It contains copyrighted materials. All rights reserved.
 (2003) on STN DUPLICATE 19
 TI Characterization and expression of the Douglas-fir luminal binding protein
 (PmBiP).
 L10 ANSWER 30 OF 85 AGRICOLA Compiled and distributed by the National
 Agricultural Library of the Department of Agriculture of the United States
 of America. It contains copyrighted materials. All rights reserved.
 (2003) on STN DUPLICATE 20
 TI Saturation of the **endoplasmic** reticulum retention machinery
 reveals anterograde bulk flow.
 L10 ANSWER 31 OF 85 AGRICOLA Compiled and distributed by the National
 Agricultural Library of the Department of Agriculture of the United States
 of America. It contains copyrighted materials. All rights reserved.
 (2003) on STN DUPLICATE 21
 TI Anticipating **endoplasmic** reticulum stress: a novel early
 response before pathogenesis-related gene induction.
 L10 ANSWER 32 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 DUPLICATE 22
 TI Replication of **tobacco** mosaic virus on **endoplasmic**
 reticulum and role of the cytoskeleton and virus movement protein in
 intracellular distribution of viral RNA.
 L10 ANSWER 33 OF 85 AGRICOLA Compiled and distributed by the National
 Agricultural Library of the Department of Agriculture of the United States
 of America. It contains copyrighted materials. All rights reserved.
 (2003) on STN DUPLICATE 23
 TI **Maize** calreticulin localizes preferentially to plasmodesmata in
 root apex.

L10 ANSWER 34 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 24

TI Overexpression of BiP in tobacco alleviates endoplasmic reticulum stress.

L10 ANSWER 35 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 25

TI Overexpression of a gene that encodes the first enzyme in the biosynthesis of asparagine-linked glycans makes plants resistant to tunicamycin and obviates the tunicamycin-induced unfolded protein response.

L10 ANSWER 36 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI The green fluorescent protein targets secretory proteins to the yeast vacuole.

L10 ANSWER 37 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Purification and identification of NPA-binding proteins with tyrosine aminopeptidase activity.

L10 ANSWER 38 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 27

TI Hyperhydricity in pepper plants regenerative in vitro: involvement of BiP (Binding Protein) and ultrastructural aspects.

L10 ANSWER 39 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 28

TI BiP and calreticulin form an abundant complex that is independent of endoplasmic reticulum stress.

L10 ANSWER 40 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

TI BiP, HSP70, NDK and PDI in wheat endosperm. I. Accumulation of mRNA and protein during grain development

L10 ANSWER 41 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

TI Water-stress-induced heat tolerance in geranium leaf tissues: a possible linkage through stress proteins?

L10 ANSWER 42 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 29

TI The geminivirus BL1 movement protein is associated with endoplasmic reticulum-derived tubules in developing phloem cells.

L10 ANSWER 43 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 30

TI Protein quality control along the route to the plant vacuole. [Erratum: Apr 1998, v. 10 (4), p. 639.]

L10 ANSWER 44 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 31

TI Molecular cloning, expression and subcellular localization of a BiP homolog from rice endosperm tissue.

L10 ANSWER 45 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 32

TI The secretory nature of the lesion of carrot cell variant ts11, rescuable by endochitinase

L10 ANSWER 46 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 33

TI A rapid increase in the level of binding protein (BiP) is accompanied by synthesis and degradation of storage proteins in pumpkin cotyledons.

L10 ANSWER 47 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 34

TI The C-terminal HDEL sequence is sufficient for retention of secretory proteins in the endoplasmic reticulum (ER) but

promotes vacuolar targeting of proteins that escape the ER.

L10 ANSWER 48 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 35

TI Characterization of the **bip** gene of *Aspergillus awamori* encoding
a protein with an HDEL retention signal homologous to the mammalian
Bip involved in polypeptide secretion.

L10 ANSWER 49 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Comparative analysis of **Bip** gene expression in **maize**
endosperm.

L10 ANSWER 50 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Water-stress regulation and molecular analysis of the soybean **Bip**
gene family.

=> d bib abs 49 47 44 41 39 35 26

L10 ANSWER 49 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 36

AN 1998:77485 BIOSIS

DN PREV199800077485

TI Comparative analysis of **Bip** gene expression in **maize**
endosperm.

AU Wrobel, Russell L.; Obrian, Gregory R.; Boston, Rebecca S. (1)

CS (1) North Carolina State Univ., Box 7612, Dep. Botany, Raleigh, NC
27695-7612 USA

SO Gene (Amsterdam), (Dec. 19, 1997) Vol. 204, No. 1-2, pp. 105-113.
ISSN: 0378-1119.

DT Article

LA English

AB Binding protein (**Bip**) is the **endoplasmic** reticulum
member of the highly conserved HSP70 (heat shock protein 70) family of
molecular chaperones. We have isolated and characterized two different
Bip cDNA clones corresponding to genes expressed in immature
kernels. These two cDNAs share extensive sequence similarity but map to
unlinked loci in the **maize** genome. A comparison of the aa
sequences predicted from the cDNA clones revealed only six aa differences
between them. Investigation of gene-specific expression was carried out by
RNA gel blot analysis. RNAs corresponding to both cDNA clones were present
in increased amounts in the endosperm of floury-2 (**fl2**), Mucronate (**Mc**)
and Defective endosperm-B30 (**De*-B30**) **maize** mutants, which
produce abnormal storage proteins. Similar increases in RNAs corresponding
to both probes were detected in cells treated with either of two agents
that interfere with protein folding, azetidine-2-carboxylic acid (**AZC**) and
tunicamycin. Investigation of the genomic complexity of the **Bip**
genes by Southern blot analysis revealed several cross-hybridizing bands.
These results are suggestive that the **Bip** genes expressed in
endosperm are coordinately regulated members of a more complex
maize Bip multigene family.

L10 ANSWER 47 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 34

AN 1998:53642 AGRICOLA

DN IND20631230

TI The C-terminal HDEL sequence is sufficient for retention of secretory
proteins in the **endoplasmic** reticulum (**ER**) but
promotes vacuolar targeting of proteins that escape the **ER**.

AU Gomord, V.; Denmat, L.A.; Fitchette-Laine, A.C.; Satiat-Jeunemaitre, B.;
Hawes, C.; Faye, L.

AV DNAL (QK710.P68)

SO The Plant journal : for cell and molecular biology, Feb 1997. Vol. 11, No.
2. p. 313-325
Publisher: Oxford : BIOS Scientific Publishers Ltd and Blackwell Sciences
Ltd.
ISSN: 0960-7412

NTE Includes references

CY England; United Kingdom

DT Article

FS Non-U.S. Imprint other than FAO

LA English

AB Proteins are co-translationally transferred into the **endoplasmic**
reticulum (**ER**) and then either retained or transported to
different intracellular compartments or to the extracellular space.
Various molecular signals necessary for retention in the **ER** or
targeting to different compartments have been identified. In particular,
the HDEL and KDEL signals used for retention of proteins in yeast and
animal **ER** have also been described at the C-terminal end of
soluble **ER** processing enzymes in plants. The fusion of a KDEL
extension to vacuolar proteins is sufficient for their retention in the
ER of transgenic plant cells. However, recent results
obtained using the same strategy indicate that HDEL does not contain

sufficient information for full retention of phaseolin expressed in tobacco. In the present study, an HDEL C-terminal extension was fused to the vacuolar or extracellular (delta pro) forms of sporamin. The resulting SpoHDEL or delta proHDEL, as well as Spo and delta pro, were expressed at high levels in transgenic tobacco cells (*Nicotiana tabacum* cv BY2). The intracellular location of these different forms of recombinant sporamin was studied by subcellular fractionation. The results clearly indicate that addition of an HDEL extension to either Spo or delta pro induces accumulation of these sporamin forms in a compartment that co-purifies with the ER markers NADH cytochrome C reductase, binding protein (BiP) and calnexin. In addition, a significant SpoHDEL or delta proHDEL fraction that escapes the ER retention machinery is transported to the vacuole. From these results, it may be proposed that, in addition to its function as an ER retention signal, HDEL could also act in quality control by targeting chaperones or chaperone-bound proteins that escape the ER to the plant lysosomal compartment for degradation.

L10 ANSWER 44 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 31

AN 1998:53142 AGRICOLA

DN IND20630718

TI Molecular cloning, expression and subcellular localization of a BiP homolog from rice endosperm tissue.

AU Muench, D.G.; Wu, Y.; Zhang, Y.; Li, X.; Boston, R.S.; Okita, T.W.

AV DNAL (450 P699)

SO Plant and cell physiology, Apr 1997. Vol. 38, No. 4. p. 404-412
Publisher: Kyoto, Japan : Japanese Society of Plant Physiologists.
CODEN: PCPHA5; ISSN: 0032-0781

NTE Includes references

CY Japan

DT Article

FS Non-U.S. Imprint other than FAO

LA English

AB The ER luminal binding protein, BiP, has been linked to prolamine protein body formation in rice. To obtain further information on the possible role of this chaperone in protein body formation we have cloned and sequenced a BiP cDNA homolog from rice endosperm. The rice sequence is very similar to the maize BiP exhibiting 92% nucleotide identity and 96% deduced amino acid sequence identity in the coding region. Substantial amino acid sequence homology exists between rice BiP and BiP homologs from several other plant and animal species including long stretches of conservation through the amino-terminal ATPase domain. Considerable variation, however, is observed within the putative carboxy-terminal peptide-binding domain between the plant and nonplant BiP sequences. A single band of approximately 2.4 kb was visible when RNA gel blots of total RNA purified from seed tissue were probed with radiolabeled rice BiP cDNA. This band increased in intensity during seed development up to 10 days after flowering, and then decreased gradually until seed maturity. Protein gel blots indicated that BiP polypeptide accumulation parallels that of the prolamine polypeptides throughout seed development. Immunocytochemical analysis demonstrated that BiP is localized in a non-stochastic fashion in the endoplasmic reticulum membrane complex of developing endosperm cells. It is abundant on the periphery of the protein inclusion body but not in the central portion of the protein body or in the cisternal ER membranes connecting the protein bodies. These data support a model which proposes that BiP associates with the newly synthesized prolamine polypeptide to facilitate its folding and assembly into a protein inclusion body, and is then recycled.

L10 ANSWER 41 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

AN 1998:453115 CAPLUS

DN 129:159163

TI Water-stress-induced heat tolerance in geranium leaf tissues: a possible linkage through stress proteins?

AU Arora, Rajeev; Pitchay, Dharmalingam S.; Bearce, Bradford C.

CS Division of Plant and Soil Sciences, West Virginia Univ., Morgantown, WV, 26506, USA

SO Physiologia Plantarum (1998), 103(1), 24-34

CODEN: PHPLAI; ISSN: 0031-9317

PB Munksgaard International Publishers Ltd.

DT Journal

LA English

AB Evidence is accumulating in favor of a linkage at the cellular level between various abiotic stresses. A study was conducted to evaluate the effect of water stress on the heat tolerance of zonal geraniums, *Pelargonium zonalis* cv. Evening Glow. Water stress was imposed by withholding irrigation until pots reached 30% (by wt.) of well-watered controls, and by maintaining the pot wt. by addns. of water for another 7 days. Leaf xylem water potential (XWP, MPa), relative water content (RWC,

%), and heat-stress tolerance (HST; LT50, defined as the temp. causing half-maximal % injury based on electrolyte leakage) were measured in control, stressed, and recovered plants. Proteins were extd. from the leaves following the above treatments, and SDS-PAGE and immunoblotting were performed by using std. procedures. Immunoblots were probed with antibodies to dehydrin and 70-kDa heat shock cognate (HSC70) proteins. Data indicate that XWP and RWC, resp., were -0.378 MPa and 92.3% for control plants and -0.804 MPa and 78.6% for stressed plants. Water-stressed plants exhibited a significant increase in HST compared to control (LT50 of 55.degree.C vs 51.degree.C). Water-stress-induced HST was not due to heat acclimation (leaf warming in stressed plants). Data also indicate that water-stress treatment did not increase freezing tolerance of geranium leaves. Increased HST was assocd. with the accumulation of several heat-stable, dehydrin protein (25-60 kDa), and both cytosolic and ER luminal (BiP) HSC70 proteins. Leaf XWP, RWC, and HST reversed to control levels concomitant with the disappearance/redn. of dehydrins and HSC70 proteins in water-stress-relieved plants. The possibility of a cellular linkage between water stress and heat-stress tolerance is discussed.

RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 39 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 28

AN 1999:8633 AGRICOLA

DN IND21960917

TI BiP and calreticulin form an abundant complex that is independent of endoplasmic reticulum stress.

AU Crofts, A.J.; Leborgne-Castel, N.; Pesca, M.; Vitale, A.; Denecke, J.
CS University of York, York, UK.

AV DNAL (QK725.P532)

SO The Plant cell, May 1998. Vol. 10, No. 5. p. 813-823
Publisher: [Rockville, MD : American Society of Plant Physiologists, c1989-
CODEN: PLCEEW; ISSN: 1040-4651

NTE Includes references

CY Maryland; United States

DT Article

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB BiP is found in association with calreticulin, both in the presence and absence of endoplasmic reticulum stress. Although the BiP-calreticulin complex can be disrupted by ATP, several properties suggest that the calreticulin associated with BiP is neither unfolded nor partially or improperly folded. (1) The complex is stable in vivo and does not dissociate during 8 hr of chase. (2) When present in the complex, calreticulin masks epitopes at the C terminus of BiP that are not masked when BiP is bound to an assembly-defective protein. And (3) overproduction of calreticulin does not lead to the recruitment of more BiP into complexes with calreticulin. The BiP-calreticulin complex can be disrupted by low pH but not by divalent cation chelators. When the endoplasmic reticulum retention signal of BiP is removed, complex formation with calreticulin still occurs, and this explains the poor secretion of the truncated molecule. Gel filtration experiments showed that BiP and calreticulin are present in distinct high molecular weight complexes in which both molecules interact with each other. The possible functions of this complex are discussed.

L10 ANSWER 35 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 25

AN 2000:40623 AGRICOLA

DN IND22041221

TI Overexpression of a gene that encodes the first enzyme in the biosynthesis of asparagine-linked glycans makes plants resistant to tunicamycin and obviates the tunicamycin-induced unfolded protein response.

AU Koizumi, N.; Ujino, T.; Sano, H.; Chrispeels, M.J.

CS Nara Institute of Science and Technology, Japan.

AV DNAL (450 P692)

SO Plant physiology, Oct 1999. Vol. 121, No. 2. p. 353-361
Publisher: Rockville, MD : American Society of Plant Physiologists, 1926-
CODEN: PLPHAY; ISSN: 0032-0889

NTE Includes references

CY Maryland; United States

DT Article; Conference

FS U.S. Imprints not USDA, Experiment or Extension

LA English

AB The cytotoxic drug tunicamycin kills cells because it is a specific inhibitor of UDP-N-acetylglucosamine:dolichol phosphate N-acetylglucosamine-1-P transferase (GPT), an enzyme that catalyzes the initial step of the biosynthesis of dolichol-linked oligosaccharides. In

the presence of tunicamycin, asparagine-linked glycoproteins made in the endoplasmic reticulum are not glycosylated with N-linked glycans, and therefore may not fold correctly. Such proteins may be targeted for breakdown. Cells that are treated with tunicamycin normally experience an unfolded protein response and induce genes that encode endoplasmic reticulum chaperones such as the binding protein (BiP). We isolated a cDNA clone for *Arabidopsis* GPT and overexpressed it in *Arabidopsis*. The transgenic plants have a 10-fold higher level of GPT activity and are resistant to 1 microgram/mL tunicamycin, a concentration that kills control plants. Transgenic plants grown in the presence of tunicamycin have N-glycosylated proteins and the drug does not induce BiP mRNA levels as it does in control plants. BiP mRNA levels are highly induced in both control and GPT-expressing plants by azetidine-2-carboxylate. These observations suggest that excess GPT activity obviates the normal unfolded protein response that cells experience when exposed to tunicamycin.

L10 ANSWER 26 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 AN 2000:349760 BIOSIS
 DN PREV200000349760
 TI Inhibitors of N-linked glycosylation induce systemic acquired resistance in cucumber.
 AU Sticher, L. (1); Metraux, J.-P.
 CS (1) Departement de Biologie, Unite Biologie Vegetale, Universite de Fribourg, 3 Rte A. Gockel, CH-1700, Fribourg Switzerland
 SO Physiological and Molecular Plant Pathology, (June, 2000) Vol. 56, No. 6, pp. 245-252. print.
 ISSN: 0885-5765.
 DT Article
 LA English
 SL English
 AB Localized treatment of cucumber (*Cucumis sativus* L. cv. Wisonsin) cotyledons with inhibitors of N-glycosylation such as tunicamycin or amphomycin resulted in systemic acquired resistance in the first leaf to the fungal pathogen *Colletotrichum lagenarium*. Resistance was maximal as early as 2 days after application and best results were observed when the inhibitor was used at 100 µM. The same treatment also induced salicylic acid accumulation as well as the expression of chitinase and a PR1-like protein. The systemic effect is not caused by the transport of tunicamycin, since tunicamycin was not detected in the leaves. Within 2 h after application tunicamycin inhibited N-glycosylation, but not protein synthesis as indicated by labelling experiments. The amount of large and small subunits of ribulose-1,5-bisphosphate carboxylase/oxygenase decreased after tunicamycin treatment and after pathogen inoculation and the expression of BiP, a protein localized in the endoplasmic reticulum was enhanced. The activation of defense reactions seems to be dependent and sensitive to N-linked glycosylation.

=> d ti 51-85

L10 ANSWER 51 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Plant BiP proteins

L10 ANSWER 52 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI N-ethylmaleimide inactivates a nucleotide-free Hsp70 molecular chaperone.

L10 ANSWER 53 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN
 TI Comparison of the expression patterns of genes coding for wheat gluten proteins and proteins involved in the secretory pathway in developing caryopses of wheat

L10 ANSWER 54 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 38
 TI Expression of protein disulfide isomerase is elevated in the endosperm of the *maize* floury-2 mutant.

L10 ANSWER 55 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI A soybean binding protein (BiP) homolog is temporally regulated in soybean seeds and associates detectably with normal storage proteins in vitro.

L10 ANSWER 56 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Ability of various members of the hsp70 family of chaperones to promote assembly of the glucocorticoid receptor into a functional heterocomplex with hsp90.

L10 ANSWER 57 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI Transport and deposition of cereal prolamins.

L10 ANSWER 58 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
 TI The binding protein (BiP) and the synthesis of secretory proteins.

L10 ANSWER 59 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 43

TI The binding protein associates with monomeric phaseolin.

L10 ANSWER 60 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Structure, assembly and targeting of wheat storage proteins.

L10 ANSWER 61 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 45

TI Binding-protein expression is subject to temporal, developmental and
stress-induced regulation in terminally differentiated soybean organs.

L10 ANSWER 62 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 46

TI Regulation of synthesis and turnover of **maize** auxin-binding
protein and observations on its passage to the plasma membrane:
comparisons to **maize** immunoglobulin-binding protein cognate.

L10 ANSWER 63 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 47

TI The **tobacco** homolog of mammalian calreticulin is present in
protein complexes in vivo.

L10 ANSWER 64 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

TI The use of protoplasts to study protein synthesis and transport by the
plant endomembrane system

L10 ANSWER 65 OF 85 CABA COPYRIGHT 2003 CABI on STN

TI Isolation of **BiP** mutants by analyzing the defective-endosperm
function in **maize**.

L10 ANSWER 66 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

TI Protein-protein interactions within the **endoplasmic** reticulum

L10 ANSWER 67 OF 85 CABA COPYRIGHT 2003 CABI on STN

TI Reorganization of the **endoplasmic** reticulum in pea leaf
epidermal cells infected by the powdery mildew fungus *Erysiphe pisi*.

L10 ANSWER 68 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI **Endoplasmic** reticulum subcompartments in a **plant**
parasitic fungus and in baker's yeast: Differential distribution of
luminal proteins.

L10 ANSWER 69 OF 85 CAPLUS COPYRIGHT 2003 ACS on STN

TI Structural organization of the spinach **endoplasmic**
reticulum-luminal 70-kilodalton heat-shock cognate gene and expression of
70-kilodalton heat-shock genes during cold acclimation

L10 ANSWER 70 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 49

TI Binding of **BiP** to an assembly-defective protein in **plant**
cells.

L10 ANSWER 71 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI ABP and **BiP**: Turnover of two **ER** proteins is unaffected
by auxin or other PGRs.

L10 ANSWER 72 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Influence of different signal peptides and prosequences on expression and
secretion of human tissue plasminogen activator in the baculovirus system.

L10 ANSWER 73 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Crystal structure of yeast TATA-binding protein and model for interaction
with DNA.

L10 ANSWER 74 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 51

TI **Rice** prolamine protein body biogenesis: a **BiP**-mediated
process.

L10 ANSWER 75 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

TI Preparation and polypeptide composition of plasma membrane and other

subcellular fractions from wild oat (*Avena fatua*) aleurone.

- L10 ANSWER 76 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 53
- TI Analysis of sorting signals responsible for the accumulation of soluble reticuloplasmins in the **plant endoplasmic** reticulum.
- L10 ANSWER 77 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Reconstitution of protein translocation from solubilized yeast membranes reveals topologically distinct roles for **BiP** and cytosolic Hsc70.
- L10 ANSWER 78 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Genes that allow yeast cells to grow in the absence of the HDEL receptor.
- L10 ANSWER 79 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN
- TI Analysis of the **BiP** gene and identification of an **ER** retention signal in *Schizosaccharomyces pombe*.
- L10 ANSWER 80 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 54
- TI Increases in binding protein (**BiP**) accompany changes in protein body morphology in three high-lysine mutants of **maize**.
- L10 ANSWER 81 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 55
- TI The **tobacco** luminal binding protein is encoded by a multigene family.
- L10 ANSWER 82 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 56
- TI Characterization of HSP-70 cognate proteins from wheat.
- L10 ANSWER 83 OF 85 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) on STN DUPLICATE 57
- TI Characterization of an immunoglobulin binding protein homolog in the **maize** floury-2 endosperm mutant.
- L10 ANSWER 84 OF 85 CABA COPYRIGHT 2003 CABI on STN
- TI Gibberellic acid regulates the level of a **BiP** cognate in the **endoplasmic** reticulum of barley aleurone cells.
- L10 ANSWER 85 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
- TI IS THERE A **BiP**-LIKE PROTEIN IN THE **ENDOPLASMIC** RETICULUM OF **PLANT** CELLS.

=> d bib abs 85 84 81 80 76 65 66 55 51

- L10 ANSWER 85 OF 85 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
- AN 1989:193322 BIOSIS
- DN BR36:93771
- TI IS THERE A **BiP**-LIKE PROTEIN IN THE **ENDOPLASMIC** RETICULUM OF **PLANT** CELLS.
- AU MIERNYK J A
- CS SEED BIOSYNTHESIS RES. UNIT, USDA, ARS, NORTHERN REGIONAL RES. CENT., 1815 N. UNIVERSITY ST., PEORIA, ILL. 61604.
- SO JOINT MEETING OF THE AMERICAN SOCIETY FOR CELL BIOLOGY AND THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY, SAN FRANCISCO, CALIFORNIA, USA, JANUARY 29-FEBRUARY 2, 1989. J CELL BIOL. (1988) 107 (6 PART 3), 763A.
- CODEN: JCLBA3. ISSN: 0021-9525.
- DT Conference
- FS BR; OLD
- LA English

L10 ANSWER 84 OF 85 CABA COPYRIGHT 2003 CABI on STN
AN 92:2676 CABA
DN 920749780
TI Gibberellic acid regulates the level of a **BiP** cognate in the
endoplasmic reticulum of barley aleurone cells
AU Jones, R. L.; Bush, D. S.
CS Department of Plant Biology, University of California, Berkeley, CA 94720,
USA.
SO Plant Physiology, (1991) Vol. 97, No. 1, pp. 456-459. 19 ref.
ISSN: 0032-0889
DT Journal
LA English
AB Aleurone layers were isolated from barley cv. Himalaya seeds and incubated
in 5 micro M GA3 or 1 micro M ABA both in the presence of 10 mM CaCl2. A
70 kDa protein which cross-reacted with an antibody against yeast binding
protein (**BiP**) was isolated. The distribution of the 70 kDa
cognate on an isopycnic gradient matched that of cytochrome c reductase
and ATP-dependent Ca2+ transport activity. **Endoplasmic** reticulum
isolated from aleurone layers treated with GA3 contained higher
BiP cognate levels alpha -amylase and cytochrome c reductase
activities and net Ca2+ transports than membranes from ABA-treated layers.

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(2003) on STN DUPLICATE 55
AN 92:22566 AGRICOLA
DN IND92005406
TI The **tobacco** luminal binding protein is encoded by a multigene
family.
AU Denecke, J.; Goldman, M.H.S.; Demolder, J.; Seurinck, J.; Botterman, J.
CS Swedish University of Agricultural Sciences, Uppsala, Sweden
AV DNAL (QK725.P532)
SO The Plant cell, Sept 1991. Vol. 3, No. 9. p. 1025-1035
Publisher: Rockville, Md. : American Society of Plant Physiologists.
ISSN: 1040-4651
NTE Includes references.
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English
AB We have cloned cDNAs of the **tobacco** homolog of the luminal
binding protein (**BiP**) that has been described in other higher
eukaryotes. In contrast to the mammalian and yeast protein,
tobacco BiP is encoded by a multigene family. The gene
products of all the cloned members of this family contain a
carboxy-terminal His-Asp-Glu-Leu peptide that may form the signal for
retention in the **endoplasmic** reticulum. Analysis of expression
patterns revealed that **BiP** transcripts are predominantly present
in tissues with high rates of cell divisions, in secretory tissues, and in
cells treated with tunicamycin. We also show that a chimeric gene
containing the coding region of one of the **tobacco BiP**
genes is able to complement a mutation in the *Saccharomyces cerevisiae*
BiP gene.

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of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 54
AN 93:19731 AGRICOLA
DN IND93007302
TI Increases in binding protein (**BiP**) accompany changes in protein
body morphology in three high-lysine mutants of **maize**.
AU Zhang, F.; Boston, R.S.
CS North Carolina State University, Raleigh, NC
AV DNAL (442.8 P94)
SO Protoplasma, 1992. Vol. 171, No. 3/4. p. 142-152
Publisher: Wien : Springer-Verlag.
CODEN: PROTA5; ISSN: 0033-183X
NTE Includes references.
DT Article
FS Non-U.S. Imprint other than FAO
LA English

L10 ANSWER 76 OF 85 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
of America. It contains copyrighted materials. All rights reserved.
(2003) on STN DUPLICATE 53
AN 93:26863 AGRICOLA
DN IND93012719
TI Analysis of sorting signals responsible for the accumulation of soluble
reticuloplasmins in the plant **endoplasmic** reticulum.
AU Denecke, J.; Ek, B.; Caspers, M.; Sinjorgo, K.M.C.; Palva, E.T.
CS Swedish University of Agricultural Sciences, Uppsala, Sweden
AV DNAL (450 J8224)
SO Journal of experimental botany, Jan 1993. Vol. 44, No. suppl.. p. 213-221

Publisher: Oxford : Oxford University Press.

CODEN: JEBOA6; ISSN: 0022-0957

NTE In the special issue: Vesicle traffic and protein transport in plants and yeast / edited by D.G. Robinson, K.J. Oparka and M.D. Watson. Papers presented at an International Symposium, March 23-27, 1992, Gottingen, FRG.

Includes references.

DT Article

FS Non-U.S. Imprint other than FAO

LA English

AB The enzyme phosphinothricin acetyl transferase (PAT) has been proven to be a useful passenger protein for the analysis of transplanted sorting signals. Tagging with C-terminal tetrapeptide sequences has led to the identification of several sequences that confer retention of the protein chimera in the endoplasmic reticulum (ER) of tobacco leaf protoplasts. Several single amino acid substitutions within the tetrapeptide led to inactivation of the signals, suggesting a high degree of specificity of the retention system. We now show that this general specificity is conserved in several dicotyledonous plant species and aleurone protoplasts from the monocot barley, although minor variations in the specificity could be observed. We also show that retention of proteins in tobacco protoplasts appears to be independent of the culture conditions and unaffected in the presence of the calcium ionophore A23187 or the inhibitor of N-linked glycosylation, tunicamycin. Monoclonal antibodies directed against the ER retention signal of a mammalian reticuloplasmin were used for the identification and purification of putative plant reticuloplasmins (RPL60, RPL75, and RPL90) from microsomal fractions of germinating tobacco seeds. Amino acid sequences and immunological data revealed significant similarity to calreticulin (CRP55), the luminal binding protein (BiP/GRP78/KAR2) and endoplasmin (ERP99/GRP94). These findings confirm that the monoclonal antibodies recognize a structural determinant of the ER retention signal and that this structure is conserved in reticuloplasmins from plants and mammals. A possible strategy for the selection and isolation of plant mutants with a modified retention specificity, based on the use of PAT as a selectable reporter, is presented.

L10 ANSWER 65 OF 85 CABA COPYRIGHT 2003 CABI on STN

AN 96:64010 CABA

DN 961603687

TI Isolation of BiP mutants by analyzing the defective-endosperm function in maize

AU Cerioli, S.; Marin, O.; Zapparoli, G.; Marocco, A.

CS Istituto di Botanica e Genetica Vegetale, Università Cattolica S. Cuore, 29100 Piacenza, Italy.

SO Maydica, (1995) Vol. 40, No. 4, pp. 311-317. 36 ref.

ISSN: 0025-6153

DT Journal

LA English

AB A class of mutations affecting the level of zein synthesis and the final size and shape of the endosperm is represented by the viable 'defective endosperms'. In this paper, twenty-five de-B mutants were considered with the aim of describing their effect on the level of b-70 proteins which are members of the 70 kDa heat-shock family present in maize protein bodies. The b-70 proteins are constitutively expressed at a much higher level in protein bodies from de-B10, de-B37 and de-B70 mutants. Western blot analysis, with the monoclonal (rat) anti-HSP70 gene family antibody, produced against Drosophila HSP70 that cross-react with a wide range of heat-shock cognates of various organisms, provided evidence to support the assignment of maize b-70s as members of the HSP70 family. In maize, the b-70 band can be resolved into three species, when analysed by two-dimensional gel electrophoresis. The two isoforms b-70I and b-70II are associated with protein body fractions and are depressed in de-B10, de-B37 and de-B70 mutants. A third protein, b-70III, is present in cytosolic fractions and its level is not influenced by the three mutations studied. Antibodies specific for b-70I and b-70II proteins were raised against a multiple antigenic peptide (MAP) corresponding to the N-terminal region. Western blot analysis indicates that only the b-70I and b-70II proteins, associated with protein bodies, gave strong positive signals when probed with MAP. In addition, the effect of stress conditions in the synthesis of b-70 proteins was studied. Experiments were conducted in vitro with dissected endosperms collected at 9 days after pollination. In preparations from tunicamycin-treated endosperms, significant amounts of b-70 labelled proteins were easily detectable. The amounts of labelled proteins were not reduced after a subsequent chase period. Instead, most of the 70 kDa proteins were still present after the 5-h chase period. In contrast, the b-70 proteins were not responsive to heat-shock. The activity of the b-70 proteins may also be modulated by their reaction with ATP. The results indicate that the b-70 proteins are similar to a previously described protein, the immunoglobulin binding protein BiP. It is proposed that the de-B10, de-B37 and de-B70 mutations affect ER metabolism.